**The 3 Line Restriction Creates A "Lost Market"**
**Of Business Customers that Would Be Served by UNE-P**

| Number of Lines with Account | Distribution of Market (Ameritech)[4] | Access Method | Distribution of Market Served by UNE-P Carriers Today[5] | |
|---|---|---|---|---|
| | | | PACE #1 | PACE #2 |
| 3 or less | 20.6% | UNE-P Available | 24.8% | 36.6% |
| 4 to 20 | 32.6% | The "Lost Market" | 62.2% | 60.3% |
| More than 20 | 46.8% | Sufficiently Large for DS-1 | 13.0% | 3.1% |

**Conclusions of Market Analysis**

* The 3 line restriction will deny competition to nearly a third of the business market in the top 50 MSAs.

* The California Small Business Association estimates that approximately 74% of small businesses in that state have between 4 and 20 lines.[6]

* Increasing the line restriction to 20 lines would still restrict UNE-P from being used to serve nearly 50% of the business lines in the top 50 MSAs.

**SBC's Texas §271 Application Confirms the Coalition's Economic Analysis**

"SWBT recommends the use of the CHC [coordinated hot cut] process *when 20 or more UNE loops* are to be converted at a single end user's address ... The CHC process is normally necessary only *for larger size business customers where the amount of existing competition is much greater.*"[7]

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4 Compiled from Ameritech *Ex Parte* , CC Docket No. 96-98, filed September 3, 1999.

5 Statistics based on the actual line distributions of two PACE Coalition members serving business customers today, unimpaired by the line restriction.

6 *Ex Parte* letter from the California Small Business Association, CC Docket 96-45, filed March 10, 1997.

7 Reply Affidavit of Candy R. Conway, Texas Public Service Commission, CC Docket No. 00-4, paragraph 42 (citing Conway Affidavit, paragraph 79) (emphasis supplied).

**The PACE Coalition Proposal Will Result in *More* Lines Being Restricted From Being Served with Unbundled Local Switching than the Current Rule**

Current Rule: In the top 50 MSAs where EELs are available, unbundled local switching cannot be used to serve customers with more than 3 lines served by a Zone 1 central office in the MSA.

**Estimated Impact of Limitation**

| Criteria | Percent Affected |
|---|---|
| Customers with > 3 lines[8] | 79.4% |
| Percent of Market in Zone 1[9] | 40.2% |
| Lines subject to Limitation | 31.9% |

Proposed Rule: In the top 50 MSAs where EELs are available, unbundled local switching cannot be used to serve customers with more than 20 lines at *any* central office in the MSA.

**Estimated Impact of Limitation**

| Criteria | Percent Affected |
|---|---|
| Customers with > 20 lines[1] | 46.8% |
| Limitation Applies to Entire MSA | 100.0% |
| Lines subject to Limitation | 46.8% |

Although the rule proposed by the PACE Coalition results in *more* lines being restricted from access to unbundled local switching, the proposed rule rationally relates the limitation to the impairment faced by entrants.

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[8] Estimated from Ameritech *Ex Parte*, CC Docket No. 96-98, filed September 3, 1999,.

[9] Estimate of the weighted average number of lines in Zone 1 offices for Ameritech, Bell Atlantic (South), BellSouth, Pacific Bell and US West. The percentage of switched lines for these RBOCs included in Zone 1 was provided by Ad Hoc in their Comments on the original Zone Density Plan proposals filed by the ILECs. The weighted average was calculated using total SLC demand for these companies as reported in the September 1, 1999 *Ex Parte* filed by CALLS in support of its proposal in Docket No. 96-262.

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July 11, 2000

Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: CC Docket No. 96-98 (*UNE Remand Proceeding*)

Dear Ms Salas:

On June 13, 2000, SBC Telecommunications, Inc. ("SBC") filed a letter in the above-captioned proceeding addressing the Commission's reconsideration of its decision to restrict the availability of local switching as an unbundled network element ("UNE") in the top 50 MSAs to customers with three or less lines.[1] A major focus of the SBC Ex Parte concerned evidence submitted by the PACE Coalition[2] that demonstrated that local entrants would be impaired from effectively serving the small business market without access to unbundled local switching (ULS). As the SBC Ex Parte correctly observed, the PACE Coalition analysis[3] is based on

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1 Letter from Gary Phillips to Magalie Roman Sales, Secretary, Federal Communications Commission, CC Docket No. 96-98, June 13, 2000 ("SBC Ex Parte").

2 The PACE (Promoting Active Competition Everywhere) Coalition was formed to establish the necessary conditions to support the widespread local competition envisioned by the Telecommunications Act of 1996, in particular for the average residential and small business consumer. PACE members include Birch Telecom, Z-Tel Communications, TALK.Com, Excel Communications, network intelligence, inc., Info Highway Communications, and MCG Credit Corporation (an investment firm that finances local entry).

3 This analysis is also referred to as the Birch Analysis because it was originally filed by Birch Telecom in its Reply to Oppositions to its Petition for Reconsideration in this proceeding. Reply of Birch Telecom, Inc. to Oppositions to its Petition for Reconsideration, CC Docket No. 96-98, filed April 3, 2000.

estimating the economic crossover at which a customer is sufficiently large to serve using high-speed digital facilities (i.e. a DS-1 or T1) instead of individual analog lines.

The economic crossover estimated by the PACE Coalition occurs at approximately 20 lines. That is, when a customer has 20 or more analog lines, it can be efficient to install equipment at the customer's premise to digitize and concentrate its traffic, transport that traffic using a DS-1 loop purchased from the ILEC, and serve the customer using local switching capacity provided by the CLEC. As the Coalition explained, unless the Commission ensures that entrants have access to ULS (and, therefore, UNE-P) to serve customers with up to 20 lines, it will create a "lost market" of residential and small businesses that will be foreclosed from competition and remain captives of the ILEC.[4]

The SBC Ex Parte raised of number of objections to the PACE Coalition's economic and legal analysis. As explained below, SBC's objections are unfounded and do not challenge, in any credible way, the factual basis of the recommendation that the Commission revise its restriction on the availability of ULS to 20 lines or more in the top 50 MSAs.

Before turning to the specific issues raised in the SBC Ex Parte, however, it is useful to point out that SBC fundamentally misunderstands the Coalition's basic position as well as the relevant impairment standard adopted by the Commission. As characterized by SBC "...the central premise of PACE's position is that switched-based competition for customers with DS-O loops is *inherently* impossible..."[5] This mischaracterization is essential to SBC's argument because SBC's substitute theory is that the mere existence of *any* competition using individual UNE loops is proof that competition is not *impossible* and, if not impossible, impairment must not exist. As the Commission is well aware, however, impossibility is not the relevant standard, impairment is. The PACE Coalition recognizes that there is some competition occurring using UNE loops obtained individually. Nevertheless, this competition is commercially insignificant.

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4 Although the current three line ULS restriction is frequently associated with foreclosing competition in the small business market, the Commission should also appreciate its significance for *residential* competition. Like all local entry strategies, carriers preparing to use UNE-P incur substantial investment costs developing back office systems, as well as the marketing and other organizational expertise unique to local entry. Although some carriers (for instance, Z-Tel and Excel) will focus on the residential market, others will come to the residential market as an *extension* of their activity in the small business market, achieving scope economies leveraging back-office systems and local market knowledge. Offering services in both the residential and small business markets is likely to become even more common as competition forces prices towards equilibrium because these entrants' dominant rival (the ILEC) recovers the cost of its infrastructure in both markets. Consequently, the Commission should anticipate that a prerequisite to effective residential competition will be entry in small business market, which will facilitate additional residential competition because it will justify the systems investment needed to serve both.

5 SBC *Ex Parte*, page 2 (emphasis in original).

The negligible entry cited by SBC[6] does not disprove the Coalition's larger point – that is, that widespread, mass-market competition is significantly impaired without access to ULS to serve those analog customers that are simply too small to justify a migration to a high-speed digital connection.

**Manual Migration Constitutes Impairment**

The Coalition has previously explained that the manual processes needed to migrate individual analog loops (given the prevailing ILEC architecture of "dumb" MDFs) increase entrants' costs and materially diminish their ability to offer service. SBC attempts to refute this conclusion with two arguments. First, SBC claims that the Coalition's comparison of the cost of a manual loop-to-port migration (which is necessary when loops are provisioned individually), to the electronic migration made possible by UNE-P lacks "probative value" and is not "representative" of the industry as a whole because there is no explanation as to why the analysis examined the States that it did. The reason these States were chosen was because these were the States the Coalition was aware of that had determined a cost-based rate for an electronic migration. As Table 1 shows, while there is variation among States on the level of cost (for both manual and electronic processes), the comparison consistently demonstrates that electronic migrations are substantially more efficient:

| State | Electronic Migration | Manual Migration | Percent Reduction in Cost |
|---|---|---|---|
| Georgia | $2.01 | $113.07[7] | 98.2% |
| Florida | $1.46 | $178.00 | 99.2% |
| Michigan[8] | $0.35 | $35.89 | 99.0% |
| New York[9] | $3.82 | $67.18 | 94.3% |

Given the consistency across these States, the PACE Coalition believes that its principal conclusion – i.e., that a manual loop-to-port migration imposes substantial costs that can be avoided through electronic means – *is* representative across the industry. Further, SBC's

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6 Consider, for instance, the Commission's most recent Local Competition Report (August 1999, Table 9.4) which shows that UNE loops have not yet achieved a 1% market share in any State other than Nevada.

7 Includes an additional charge for a coordinated hot cut.

8 SBC also claims that the $0.35 charge established by the Michigan Public Service Commission replaces line connection charges, but not service order charges. This is an accurate representation of SBC's *position*, but not, in the Coalition's view, the *decision* of the Michigan PSC. This issue is currently before the PSC in Docket U-11831, which is expected to be decided shortly.

9 It is unclear whether this charge was the product of a cost analysis reviewed by the New York Public Service Commission, or whether it is simply a rate that was adopted as proposed by Bell Atlantic without review by the PSC.

evaluation of these additional costs systematically evaluates only half the issue – that is, SBC discusses only the additional non-recurring costs imposed by the ILEC in its charges for the loop. This architecture, however, requires both a loop *and* port appearance in the central office, as well as cross-connection. As an estimate of the CLEC's non-recurring cost of the port-appearance, the Coalition comparison used the non-recurring charge for a port. Because this charge (if calculated correctly as TELRIC) should be the non-recurring cost of a "generic" efficient provider, this is the best available estimate of an efficient CLEC's own non-recurring cost.[10]

Second, SBC claims that the additional costs of manual "hand-crafting" do not constitute impairment. In support of this argument, SBC makes two points:

* The costs of manual provisioning are only one cost difference between UNE-P and self-provisioned local switching; and

* The Coalition's focus on additional costs is "flagrantly inconsistent" with the Supreme Court's decision.

With respect to SBC's first point, it is correct that these additional provisioning costs are "only one component" of a cost comparison between providing mass-market services using ULS and self-provisioned local switching. What SBC ignores, however, is that the remaining cost components – i.e., the costs of local switching, backhaul, and interoffice transport – are likely to be higher for an entrant than the incumbent.[11] Consequently, while there *are* other cost components that could be considered, the fact that the Coalition analysis assumes that the entrant can achieve the same scale efficiencies as the ILEC simply means that the Coalition analysis *underestimates* the level of impairment.

With respect SBC's claim that the Coalition analysis "flagrantly disregards" the Supreme Court's *Iowa Utilities Board* decision, nothing could be further from the truth. It is simply not accurate (as SBC claims) that the Supreme Court rejected the view that higher costs can constitute an impairment.[12] The Supreme Court merely concluded that a trivial increase in cost

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10 For instance, SBC's Attachment B indicates that the non-recurring cost of a "hot cut" in California is $18.88 (for one line). However, this amount includes only the cost of the loop component. To this cost must be added the non-recurring costs incurred by the entrant to establish the port appearance at the cross-connect. Because an appropriate TELRIC study would estimate the forward-looking costs of an efficient entrant, a suitable estimate of an entrant's cost would be the TELRIC-based non-recurring charge of the ILEC. In California, this would add an additional $7.98 per loop-to-port migration.

11 There is no evidence to conclude that switch manufacturers provide steeper discounts to entrants than to their largest customers, the ILECs. Further, there are substantial, well-documented economies of scale in the interoffice network that are enjoyed by ILECs because of their monopoly (or near monopoly) position.

12 SBC Ex Parte, page 5. SBC goes so far as to misquote the Supreme Court, twisting its analogy of ladders and lightbulbs by claiming that the Court "...noted that if a person could change a lightbulb by standing on a stack of books and fully extending its arm, he

*Continued*

may not rise to the level of impairment if it carried no market significance. The direction from the Supreme Court was not that cost is unimportant, only that the increase in cost must have a material impact. Moreover, the Court recognized that even a small increase in cost *would* constitute impairment if the market were sufficiently competitive.[13] The PACE Coalition has no ability to accurately predict *equilibrium* revenues, particularly when its members (and others) will use UNEs to offer multiple services -- local, long distance, and information services/access to name a few – making any direct comparison impossible. What we do know, however, is that with the ability to use ULS (and UNE-P) to serve residential and small business customers, competition will quickly drive retail prices to their underlying cost.

It is this point – on the *degree* of impairment – that the Coalition has focused its analysis. We have empirically demonstrated that the provisioning difficulties inherent in providing UNE loops imposes on entrants significant additional costs – costs that are avoided in their *entirety* by an ILEC positioned to simply retain the customer -- that can be substantially reduced (by well over 90%) with access to ULS, and thus UNE-P. As explained below, the competitive landscape changes significantly when these costs (and manual systems) are avoided in markets where UNE-P has become available.

Finally, it is important to note that these additional migration costs are not the only impairments caused by manual provisioning systems. As the Commission is well aware, these manual hot-cut processes are routinely plagued with problems that affect the quality and reliability of CLEC services.[14] The additional migration costs documented by the Coalition are only one factor, but they are an important factor that can be easily quantified.

**MARKET EVIDENCE CONFIRMS (NOT CONTRADICTS) THE LEVEL OF IMPAIRMENT**

In addition to its more theoretical discussion as to why entrants are not impaired without access to unbundled local switching, SBC claims that "market evidence" demonstrates that carriers can compete even if they are limited to purchasing UNE loops or using their own facilities. In support of this conclusion, SBC offers three observations:

* CLECs have installed switches;

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was not impaired without access to a ladder that would make the job easier." More accurately, the Court concluded that such an arrangement *would* constitute impairment, but that if the distinction was between two ladders, one a half-inch taller than the other, *then* the impairment might not exist.

13 Specifically, the Court reasoned that in a world of perfect competition, in which all carriers are providing service at marginal cost, the Commission's equating of increased cost (or decreased quality) with "necessity" and "impairment" might be reasonable; but the Commission has not established the existence of such an ideal world.

14 The Coalition will file additional information shortly that summarizes these additional problems associated with manual loop provisioning.

* SBC has seen an increase in the number of FDT (Frame Due Time) migrations;[15] and

* AT&T has purchased a cable company.

The Coalition acknowledges that CLECs have, in some markets, self-provisioned local switching. Indeed, Coalition members themselves use non-ILEC switches where it makes economic sense to do so. For instance, Birch Telecom has installed two local switches, while InfoHighway leases local switching capacity from a non-ILEC provider. The existence of these switches proves nothing without an understanding of the market that such facilities are used to serve. Both Birch and InfoHighway use their switches to serve customers with DS-1 volumes (or above).[16] SBC's observation that there are switches being installed is irrelevant to the point of the Coalition's analysis – we freely acknowledge that there exists the possibility of self-provisioning switching in the largest MSAs for the largest customers. The issue concerns the usefulness of those switches in providing mass-market service, a market we have shown can best be approximated by analog customers with fewer than 20 lines.

The fact is that switch-based (i.e., UNE loop-based) competition is effectively limited to serving large business customers desiring high-speed digital service is confirmed by a recent WorldCom filing.[17] As WorldCom explained, it primarily serves customers that have *already* migrated to digital services using PBXs to convert analog lines to digital format. WorldCom is able to serve these customers with T1 or ISDN-PRI access arrangements because they connect to PBXs that provide analog-to-digital conversion and aggregate the traffic of 30 or more lines.

Moreover, SBC's understanding of local market conditions as explained in its Ex Parte is fundamentally different than that expressed in its recent Section 271 application to provide interLATA service in Texas. Although in its Ex Parte SBC expresses skepticism that local competition is focused on DS-1 and above customers,[18] its sworn affidavits in the Texas Section 271 proceeding evidence a clear understanding that competitive conditions are quite different for larger customers with 20 lines or more:

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15 SBC Ex Parte, page 4 and Attachment C.

16 In addition, even a cursory examination of traffic patterns indicates that interconnected CLEC switches are used predominantly to serve the emerging Internet market. While this is a critically important segment of the local market, the existence of CLECs using self-provisioned local switching to serve *this* market segment does not prove, as SBC implies, that CLECs seeking to more broadly serve analog customers are not impaired without access to ULS.

17 *See* Letter from Chuck Goldfarb, to Margalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 96-98, June 21, 2000.

18 *See* SBC Ex Parte at page 3.

> SWBT recommends the use of the CHC [coordinated hot cut] process *when 20 or more UNE loops* are to be converted at a single end user's address ... The CHC process is normally necessary only *for larger size business customers where the amount of existing competition is much greater.*[19]

The significance of SBC's sworn affidavit cannot be overlooked. Not only does SBC recognize the highly disparate levels of competition for "large" and "small" business customers, but it confirms that the breakpoint between these markets is the 20-line threshold that the Coalition has shown is the boundary between analog and digital service.

The overall theme of SBC's "numeric" argument is that the mere existence of *some* UNE loop-based competition is sufficient to prove that carriers are not impaired without access to ULS. Although SBC points to the increasing number of FTD hot cuts as evidence that competition is "possible" without access to ULS,[20] SBC completely ignores the relative *scale* of these orders compared to the competition generated by UNE-P. For instance, while SBC touts FDT volumes of roughly 2,124 lines/month,[21] the commercial activity made possible by UNE-P *is more than ten times that amount* (22,925 month).[22] In addition, the lines gained by entrants (for instance, the 2,124 lines/month gained using UNE loops alone) represent the *total* competitive inroad into both new *and* existing lines (which, in Texas, is roughly 9.4 million lines),[23] while SBC is *adding* roughly 13,000 lines/month.[24]

It is impossible to conclude from SBC's "competitive statistics" that the level of UNE loop activity has any commercial significance. The only meaningful conclusion that can be gleaned from these statistics is the 90% reduction in competitive activity that would result from the removal of UNE-P based forms of competition. By any measure, such impairment is

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19 Reply Affidavit of Candy R. Conway, In the Matter of SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas, Texas Public Utility Commission, CC Docket No. 00-4, paragraph 42(citing Conway Affidavit, paragraph 79), (emphasis supplied).

20 SBC Ex Parte, page 4 and Attachment C.

21 SBC Ex Parte, Attachment C (average for December 1999 through May 2000). The highest volume month (May 2000) was 2,629 lines.

22 Supplemental Joint Affidavit of Candy R. Conway and William R. Dysart, CC Docket No. 00-4, page 16. UNE-P volumes are averaged for December 1999 and January 2000 (the two months of current data provided in the Affidavit).

23 Source: SBC's Response to the FCC's Local Competition Survey, data as of June 30, 1999.

24 Source: SBC's Response to the FCC's Local Competition Survey. Average monthly growth in lines between December 31, 1998 and June 30, 1999 (the most recent months available).

significant and substantial, and provides clear evidence that lack of access to UNE-P would "materially diminish a requesting carrier's ability to provide the service it seeks to offer."[25]

Further, SBC (of all ILECs) should be aware of the critical need to access ULS/UNE-P to serve mass markets. SBC purchased Ameritech precisely because (it then argued) it needed to be able to serve the top 50 MSAs and, absent the merger, it could not enter these markets on its own. As explained by one of its senior vice presidents:

> [W]hat I am telling you is we're [SBC] not going to go into a de novo entry to evolve into a national local company. It would be a death march in our opinion.[26]

Significantly, SBC's post-merger plans to enter out-of-region markets included plans to serve large business customers, data customers, and the small-business/residential market. While the details of those plans are proprietary, the public record indicates that SBC intends to serve the last of these markets (i.e., the small business and residential market) using ULS/UNE-P.[27] Thus, where its own business interests are at stake, SBC has reached the same conclusion as the members of the PACE Coalition – the small business/residential market can only be commercially addressed with access to ULS.

Finally, SBC tries to dismiss the significant impairment caused by the manual provisioning of loop-at-a-time entry with the observation that if "... the hot cut process impairs CLECs from using their own switches [to serve mass markets], the AT&T's strategy [to try and develop cable telephony] would have to be a colossal mistake."[28] On the one hand, we agree with SBC that the "cable strategy" will impose on AT&T a number of manual processes that are at least as severe as the "hot cut" process. However, there is no evidence that the "cable option" is practical in the small business market at issue here, nor is there any evidence that the strategy itself is not a mistake. More to the point, even if the strategy were to prove successful, it does not lessen the impairment that the Coalition's members (and every carrier like them) experiences in competition with the ILECs.

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25 Third Report and Order and Fourth Further Notice of Proposed Rulemaking, CC Docket 96-98, para. 51.

26 Testimony of James Kahan, SBC Senior Vice President, before the Ohio Public Utilities Commission, Case No. 98-1082-TP-AMT, Tr. 176-177, January 7, 1999.

27 *See* Rebuttal Testimony of Joseph Gillan before the Illinois Commerce Commission, Docket No. 98-0555, and Deposition of James Kahan, Public Utilities Commission of Ohio, Case No. 98-1082-TP-AMT.

28 SBC Ex Parte, page 3.

## THE BIRCH ANALYSIS PROPERLY (AND CONSERVATIVELY) ESTIMATES IMPAIRMENT

In addition to its general observations concerning impairment, SBC offers a number of specific criticisms of the Birch Analysis. Specifically, SBC claims that the Birch Analysis incorrectly calculated the crossover because the Birch Analysis:

* did not use representative collocation costs;

* did not consider using an alternative to collocation, such as special access;

* inappropriately considered collocation cost as a "loop-by-loop" expense; and

* incorrectly applied SBC's nonrecurring charges.

With respect to the first three of these points, SBC fails to appreciate just how conservatively the Birch Analysis approached the question of collocation costs. It is important to understand that because of the excessively optimistic fill factors and amortization assumptions used in the Birch Analysis, collocation costs are insignificant. In the real world, however, a CLEC would not achieve such high fill factors for many years, while its actual cost of capital would be much higher (due to the risk associated with competing with the nation's largest monopolies). What is more, SBC's view that collocation costs should not be recovered from collocated-services is completely at odds with any recognizable principle of economics, including the Commission's TELRIC principles.

Although the Coalition believes that the Analysis already minimizes collocation costs beyond a reasonable level, to prove just how groundless SBC's claims are we have recalculated the analysis eliminating collocation costs *entirely*. Of course, no entrant, no matter how efficient, could achieve collocation costs of zero, but the following Table assumes just such a result.

| LINES | Monthly Loop (corrected)[29] | DS-1 Contract Length | | |
|---|---|---|---|---|
| | | 12 Month | 24 Month | 36 Month |
| 12 | $152.66 | $266.43 | $221.15 | $210.16 |
| 13 | $165.37 | $266.43 | $221.15 | $210.16 |
| 14 | $178.08 | $266.43 | $221.15 | $210.16 |
| 15 | $190.79 | $266.43 | $221.15 | $210.16 |
| 16 | $203.50 | $266.43 | $221.15 | $210.16 |
| 17 | $216.21 | $266.43 | $221.15 | $210.16 |
| 18 | $228.92 | $266.43 | $221.15 | $210.16 |
| 19 | $241.63 | $266.43 | $221.15 | $210.16 |
| 20 | $254.34 | $266.43 | $221.15 | $210.16 |
| 21 | $267.05 | $266.43 | $221.15 | $210.16 |
| 22 | $279.76 | $266.43 | $221.15 | $210.16 |
| 23 | $292.47 | $266.43 | $221.15 | $210.16 |
| 24 | $305.18 | $266.43 | $221.15 | $210.16 |

As the above Table shows, even the assumption of zero collocation costs does not materially change the conclusion – the economic crossover to digital service is approximately 20 lines. Although the crossover does decline as the customer's contract commitment increases, the impairment analysis should not limit CLECs to only those customers willing to sign long-term contracts. The market at issue – small businesses and residential customers – are not typically served with long term contracts and forcing CLECs to only offer such arrangements would effectively foreclose entry and competition for this customer segment.

SBC also claims that the Analysis failed to consider the declining nature of SBC's non-recurring charges. However, the Analysis already assumes the *most* efficient loop-migration arrangement possible by adopting the non-recurring costs of an electronic migration of the loop (such as is possible today, but only with UNE-P). This approach was used because the goal of the crossover analysis is to estimate the point at which it becomes efficient to migrate a customer to digital services where "hand-crafting" is the industry norm, and not an impairment imposed only on entrants.

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[29] While removing collocation costs from the Analysis, it was discovered that the original Analysis incorrectly included the monthly port costs in the Monthly Loop column. As explained in earlier Coalition Ex Partes, port costs should be removed to maintain the conservative assumption that the entrant's switch, backhaul, and interoffice transport costs are no higher than the switch and transport (no backhaul) costs of the ILEC. Unfortunately, these costs were inadvertently retained in earlier computations. Although the above Table has corrected the error, it does not materially change the crossover analysis. Without the correction, the crossover (assuming zero collocation costs) would be 19 (one-year contract), 16 (two-year contract), and 15 (three-year contract). The correct crossovers, however, are shown in the Table above.

Finally, SBC claims that the Coalition has offered no new evidence. According to SBC, the Commission has already reviewed evidence concerning the additional costs caused by manual provisioning and the Coalition has presented no new reason why the customer line cut-off should be increased.[30] It is this aspect of SBC's Ex Parte that is the most disturbing. The Coalition has clearly demonstrated that "hand-crafting" local service cannot viably support mass-market competition. We have rationally related this impairment to the number of analog lines serving the customer using a highly conservative analysis that both *underestimates* the direct economic disadvantage (as measured by cost) and has (for purposes of this discussion) *ignored* the other effects of manual provisioning on reliability, quality and volume. In addition, we have shown from actual market experience in New York and Texas the substantial differences in competitive activity made possible with access to ULS and UNE-P, which stands in stark contrast to the level of competitive activity where only UNE loops are offered. No other demonstration of impairment could be more compelling.

Sincerely,

Genevieve Morelli

cc: Jonathan Reel
Larry Strickling
Jake Jennings
Christopher Libertelli

30 SBC Ex Parte, page 6.

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July 19, 2000

Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: CC Docket No. 96-98 (*UNE Remand Proceeding*)
Ex Parte Communication

Dear Ms Salas:

Over the past several months, the PACE Coalition[1] has made a number of filings in the above-captioned proceeding detailing the impairment to new entrants seeking to offer service to consumers and businesses with less than 20 analog lines caused by restrictions on the availability of the local switching unbundled network element ("UNE").[2] The focus of previous Coalition submissions has been on the additional costs that would be incurred by an entrant seeking to "hand-craft" analog service to an individual customer – costs that can be avoided by access to unbundled local switching (ULS). In the top 50 markets where large customers are concentrated,[3] however, the Coalition has shown that it may be possible to viably serve a

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1 The PACE (Promoting Active Competition Everywhere) Coalition was formed to establish the conditions necessary to support the widespread local competition envisioned by the Telecommunications Act of 1996, in particular for the average residential and small business consumer. PACE members include Birch Telecom, Z-Tel Communications, TALK.Com, Excel Communications, network intelligence, inc., InfoHighway Communications, and MCG Credit Corporation (an investment firm that finances local entry).

2 *See* Letter from Genevieve Morelli to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 96-98, July 11, 2000.

3 It is useful to note that while ILEC *regulatory* filings argue for expanding any restriction on ULS beyond the top 50 markets, ILEC *business* strategies reveal the conclusion that the top 50 MSAs form the *outer* boundary of a unique market layer. For instance, a core presumption of the SBC/Ameritech merger is that a "national market" of large business

*Continued*

customer with more than 20 lines by first converting its traffic to digital format, then using a high-speed digital loop to connect the customer to an entrant-supplied local switch.

This hand-crafting -- i.e., reconfiguring the customer's loop, backhauling its traffic, reconnecting the loop to the entrant's switch, while coordinating the various steps needed to transfer the number to the new provider's equipment -- are collectively referred to as a "hot cut." The Coalition has previously emphasized the *quantitative* impairment created by the hot-cut process. The purpose of this letter is to discuss the *qualitative* problems created by "hot-cuts" and, just as importantly, explain how these concerns have influenced ILEC network design and CLEC market behavior.

## MANUAL PROVISIONING IS A RELIC OF A BYGONE ERA

To begin, it is useful to understand that the unnecessary costs and qualitative problems that result from manual provisioning are well understood in the telecommunications industry. For decades, telecommunications companies have endeavored to eliminate manual provisioning wherever possible through massive investment in systems and equipment to support automated provisioning systems. The very *existence* of this effort – an effort that continues to this day – is a testament to seriousness of the problems created by manual approaches.

A fundamental tenet of telecommunications engineering (actually, *all* engineering) is to avoid unnecessary manual activity. Manual activity is expensive and unavoidably unreliable -- a fact confirmed by the emphasis throughout our economy on replacing routine tasks with automated systems whenever, and wherever, possible. The manual hot-cut process should be seen as an exception to this principle, not a prerequisite for local competition.[4]

The manual "heart" of the hot-cut process is the physical rearrangement of copper lines at the Main Distribution Frame (MDF). Importantly, the MDF is one of the most congested areas of a central office. The distributing frame was introduced at the turn of the *last* century[5] because it made more efficient the highly manual process of organizing, testing and repairing wires as

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customers is addressable in the top 50 MSAs, while the Bell Atlantic/GTE merger assumes that the "national" market is even more concentrated in fewer cities. Given the paucity of competition in even these cities, there is no basis to expand any ULS restriction beyond the top 50 MSAs.

4 Certainly, where hot-cuts are necessary to a particular entry strategy, the Commission should remain diligent that the process be made as efficient, reliable and cost-effective as possible. Our principal point, however, is that there is a large difference between relying on the hot-cut process *where necessary*, and *making necessary* the hot-cut as a prerequisite to entry. The former recognizes the process as a "necessary evil," while the later makes the "evil necessary."

5 The "distributing frame" was patented in 1893.

they came into the central office. As explained by noted telecommunications engineer Amos E. Joel:[6]

> The invention of the MDF improved efficiency in the central office: Most obviously, arranging the wires in a more orderly fashion made it easier to maintain, test, and repair them. In addition, the MDF provided flexibility in connecting outside plant and wire center equipment ... Such a change of course involved manual labor, but in the early part of the century, manual work was common and was needed to provide much of the functionality that the network offered.[7]

Of course, the past 100 years has seen radical advancement in virtually every area of telecommunications, but the basic design of the MDF has remained largely unchanged. As a result, the operational design goal has been to move activities *away* from the MDF to where they could be automated, thereby creating a network that could be as software-defined as possible. As Mr. Joel explains:

> One notable example of this transformation is in the reduction of work needed at the MDF. Cross-connections are no longer used to connect a particular loop with the directory number assigned to a particular port. Instead, the task of associating a particular directory number and set of services and features with a particular loop is made electronically via a software change in the relevant database in the switch. The cross-connection is usually left in place. Similarly, the task of disconnecting service for a customer no longer requires a craft visit to the MDF. Once again, a software change accomplishes that task.
>
> ***
>
> Having made a successful transition to a software-based intelligent network, it is difficult to endorse any hardware solution to a given network design problem if a software solution can be found.[8]

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6 Mr. Joel's perspective on manual systems should be given significant weight. Mr. Joel, a graduate of the Massachusetts Institute of Technology, spent 43 years with Bell Telephone Laboratories and holds more than 70 patents. Mr. Joel has been awarded the New Jersey Research & Development Council's Outstanding Patent Award (1972), the IEEE Alexander Graham Bell Medal (1976), the Franklin Institute-Stuart Ballantine Medal (1981), the International Telecommunication Union Centenary Prize (1983), and the Columbian Medal (1984), the Kyoto Prize (1989), the Medal of Honour (1992), and the Charles E. Scribner Trophy (1992). In 1993, President Clinton presented Mr. Joel the United States' highest engineering award, the National Medal of Technology.

7 Affidavit of Amos E. Joel, before the New York Public Service Commission, Case 98-C-0690, paragraph 27.

8 *Id.*, paragraphs 37 and 41.

Said differently, the Commission should strive to minimize reliance on the hot-cut process, both to make the process more efficient when it is necessary (by reducing the number of unneeded hot-cuts), as well as to improve the overall efficiency of the network. Further, there should be little disagreement that manual provisioning results in impairment, for there has been a centuries-long process to eliminate it wherever possible. This effort would have been unnecessary if there were not significant problems that justified the investment to support automated provisioning.

**THE CONSEQUENCES OF MANUAL PROVISIONING**

To appreciate *why* the hot cut process so frequently degrades service quality and reliability, it is useful to first discuss the various manual steps that are necessary to its execution. Fundamentally, a hot-cut requires the coordinated achievement of two actions: (1) the customer's loop must be reconfigured to terminate on CLEC equipment connected to the CLEC's switch (the loop cut), and (2) software changes are needed to assure the appropriate routing of inbound calls (i.e., porting of the telephone number). These steps must occur in the appropriate sequence to minimize the time in which the customer's service is impaired during its transfer between carriers.

As the Commission is well aware, the efficacy of the hot cut process has been the subject of considerable controversy, particularly in the context of the Section 271 applications of Bell Atlantic and SBC for New York and Texas, respectively. It is not our intention here to assess blame, or to dispute the reliability of either carrier's systems or record on this issue. Rather, our point concerns the *systemic* frailty of an approach that is so dependent upon manual systems for its execution. Consider, for instance, the following steps used in SBC's coordinated hot-cut process:

**TABLE 1: THE COORDINATED HOT CUT PROCESS**

| Step | Type of Activity |
|---|---|
| Pre-Installation Test Procedure | |
| - Entrant Confirms with SBC's LOC the scheduled date and time for the hot cut as provided in the FOC. | Manual |
| - SBC's LOC confirms order with frame technician who begins laying cross-connects on the MDF. | Manual |
| - SBC remotely tests the customer's circuit facility assignment and confirms dial tone and that CFA shows the same telephone number for the customer as on entrant order. | Manual |
| Cut-Over Procedure | |
| - Entrant technician calls SBC within 30 minutes of the scheduled time to authorize cut. | Manual |
| - SBC technician effects loop cutover. | Manual |
| - Entrant ports number by sending activate message to NPAC. | Manual/ Electronic |

Even SBC recognizes the extreme manual nature of the hot cut process given the prevailing architecture of ILEC networks. In SBC's own words, the coordinated hot cut process is characterized by "manual hand holding"[9] – hand holding that constrains capacity and imposes costs.[10] Efficient conduct of the process is an objective the Commission should encourage, but there should be no doubt that the process *itself* contains a number of potential points of failure.

The complex nature of the hot cut process means customers are subject to service disruptions – disruptions that can only be minimized by *additional* complexity and human involvement. The customer disruption involves both a loss in service, the disconnection of calls underway, and the threat of an even longer period where inbound calls will not be successfully routed. Although the ILECs frequently recite these impediments in matter-of-fact tones[11] -- as

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9 Testimony of Mr. Royer, November 2, 1999, Texas Public Utility Commission Hearing Tr. at 171.

10 Although SBC offers a less "coordinated" hot-cut process (Frame Due Time), this alternative is also a manual activity.

11 *E.g.*, Affidavit of Candy R. Conway, In the Matter of SBC Communications Inc. for Provision of In-Region InterLATA Services in Texas, Texas Public Utility Commission, CC Docket No. 00-4, para. 75:

> On a flow-through migration request, the CLEC is responsible for notifying the end user that the migration will occur within a 60-minute interval beginning with the DFDT time. In addition, the CLEC must

*Continued*

though their acknowledgment renders them less relevant – what matters is the customer's *perception* of the CLEC's ability to provide quality service.

The Commission is well aware of the difficulties experienced by carriers that have attempted to offer services relying heavily on the hot-cut process. Attached to this letter are the various affidavits filed by Sarah DeYoung on behalf of AT&T detailing that carrier's experience with SBC in Texas.[12] Although many of the specific metrics in the AT&T affidavits are proprietary, the generic nature of the problems experienced by AT&T are well documented.[13] Qualitative impairments include extended (and unexpected) service outages, customer confusion and dissatisfaction.

Given the concerns detailed by the AT&T affidavits, the Commission should not be surprised that the CLEC industry generally focuses on serving larger (which is to say, digital) customers that are accustomed to provisioning activities that are manually oriented. In the analog market, however, manual provisioning has largely been engineered out of the system, and forcing entrants to endure a hot-cut process that the incumbent avoids presents a substantial competitive barrier.

Although the AT&T affidavits document the problems experienced by a carrier that tried to overcome the difficulties of the hot-cut process, this is not the only evidence of the problem. Significantly, some entrants have tried to compete using analog loops and later *abandoned* the approach, while many others understood (without direct experience) that the wiser course would be to *avoid* the problem altogether by focusing on digital customers from the start. Attachment 5 is the Affidavit of Rick Tidwell, Birch Telecom's Vice President – Regulatory Relations. As the Tidwell Affidavit explains, Birch Telecom initially offered services to customers with analog loops by migrating these loops to one of its three switches. However, the delay, confusion and service degradation experienced through the process ultimately convinced Birch that it made sense to serve only digital customers with DS-1 needs through its own switching capacity. This conclusion is not unique to Birch Telecom. Many entrants have reached the same conclusion – either through their own experience or from the examples of Birch and others.

Furthermore, Attachment 6 is an affidavit from Peter Karoczkai, InfoHighway Communications' Senior Vice President – Sales and Marketing. InfoHighway leases switch capacity to serve its customers in New York. As the Karoczkai Affidavit confirms, alternative

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advise the end user that the migration will cause a temporary loss of service, and any calls in progress at that time will be interrupted.

12 *See* Declaration of Sarah DeYoung on behalf of AT&T Corporation (attached here as Attachment 1); Reply Declaration of Sarah DeYount (Attachment 2); Supplemental Joint Declaration of Sarah DeYoung and Mark Van De Water (Attachment 3); and Supplemental Joint Reply Declaration of Sarah DeYoung and Mark Van De Water (Attachment 4).

13 The Coalition has requested and AT&T has agreed to file the proprietary versions of the DeYoung affidavits in the record of this proceeding.

local switching capacity in the New York market – the most *advanced* local market in the nation – is only practically available to serve customers with above DS-1 volumes.

Similarly, Focal Communications Corporation ("Focal") has informed the Commission that it "...concentrates exclusively on customers that have a current need for DS1 communications functionality or higher."[14] In addition, the flagship product that Intermedia Communications offers over its own facilities (unifiedvoice.net[SM]) is designed for customers requiring DS-1 connectivity.[15]

Finally, WorldCom has indicated that its facilities-based strategy is used to serve digital customers with either T-1 or ISDN-PRI needs, connected to digital PBXs that typically aggregate at least 30 analog lines.[16] Although the WorldCom filing concludes with the *claim* that Worldcom would extend service to smaller customers if granted unrestricted access to EELs, this claim is contradicted by the logic of the filing[17] and Worldcom's actual market behavior where unrestricted EELs are available.[18] The Coalition agrees with WorldCom that unrestricted access to EELs would expand the competitive opportunity to serve high-speed *digital* customers by incrementally increasing the reach of competitive networks. But there is no reason to conclude

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14 Letter from Richard Metzger and Patrick Donovan to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 96-98, May 19, 2000, page 2.

15 *See* www.intermedia.com/products/voice/uv-net.html.

16 Letter from Chuck Goldfarb to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 96-98, June 21, 2000, page 2.

17 The core demonstration of WorldCom's submission is that facilities-based competition is (at this point) effectively limited to digital customers. As WorldCom itself explains:

> WorldCom cannot provide analog trunk service to the end user without assuming the cost of placing in its collocation spaces expensive customer terminating equipment used to convert digital signals to analog signals.
>
> Goldfarb Letter, page 3.

WorldCom never explains how unrestricted access to high-speed DS-1 EELs would reduce (much less eliminate) this substantial barrier. Rather, WorldCom confirms the principal conclusion of the Birch Analysis -- that is, the cost to convert a customer's analog traffic to digital format limits service (with today's technology) to customers with at least 20 lines.

18 WorldCom acknowledges that unrestricted EELs have been available to it in Florida. In other words, WorldCom has already confronted the circumstance that it claims would enable it to support smaller customers (i.e., unrestricted access to EELs), at least in that State. Despite this opportunity, however, WorldCom' subsequent complaint proceeding against BellSouth to enforce its right to UNE prices (FPSC Docket 98-1121-TP) was limited to DS-1 EELs, confirming once again that facilities-based competition is effectively limited to this market segment.

that EELs would reduce, in any manner, the economic crossover at which it becomes feasible to migrate an analog customer to digital service.[19]

Both SBC and US WEST have claimed that the crossover between DS0 and DS1 loops is far below 20 lines.[20] Although these companies have not provided an explanation for their conclusion, it is obvious on its face that neither company's crossover analysis included the cost to convert a customer's analog service to digital format. Of course, these costs are a necessary prerequisite to using digital transport, and play a prominent role in determining the *economic* crossover between analog and digital service. The Commission should give no weight to the crossovers calculated by these ILECs because they represent a technologically impossible configuration – i.e., a configuration where the customer's analog loop service is mysteriously carried over digital facilities without incurring any conversion cost.

Significantly, while the future may be defined in digital terms, the present is dominated by analog service. Table 2 documents the dominance of analog equipment on customer premises.

**Table 2: Measuring the Analog Market[21]**
**(lines in thousands)**

| Holding Company | Distribution of Analog Lines | | | | Total Switched Lines | Percent Analog[22] |
|---|---|---|---|---|---|---|
| | Main | PBX | Centrex | Total | | |
| SBC | 48,209 | 1,618 | 5,441 | 55,268 | 58,384 | 94.7% |
| Bell Atlantic | 51,478 | 1,473 | 4,542 | 57,493 | 62,526 | 92.0% |
| BellSouth | 21,767 | 902 | 545 | 23,213 | 24,148 | 96.1% |
| US WEST | 14,506 | 307 | 1,365 | 16,177 | 17,449 | 92.7% |
| Total | 135,960 | 4,299 | 11,892 | 152,152 | 162,506 | 93.6% |

Given the preponderance of the evidence that the analog market is not currently open to facilities-based entry, it should not be surprising that the Commission's Local Competition Report confirms that UNE loops comprise a negligible part of the market. Table 3 summarizes the level of UNE loop penetration (at the holding company level) provided in the Commission's

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19 Indeed, as the Coalition has previously shown, the economic crossover increases to serve a customer using the EEL configuration because of the additional costs of the EEL itself.

20 *See* Letter from Gary Phillips to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 96-98, June 13, 2000; Letter from Melissa E. Newman to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 96-98, June 12, 2000.

21 Source: 1999 ARMIS 43-08, Table II, Switched Access Lines by Technology.

22 Potentially understates the percentage of analog lines because it assumes all lines classified as "other switched lines" are digital.

most recent report.[23] As Table 3 shows, not only have UNE loops failed to achieve a significant share of the *existing* market (with a national share of less than ¼ of 1%), they are not even having a large impact on ILEC *growth*. From 1997 to 1998, UNE loop growth was less than 4% of the growth in switched lines enjoyed by the ILECs.

**Table 3: UNE-Loop Market Penetration**
**(lines measured in thousands)**

| Holding Company[24] | ILEC Lines | UNE Loops | UNE-Loop Market Share | Annual Growth (1997-1998) | |
|---|---|---|---|---|---|
| | | | | ILEC Lines | UNE Loops |
| SBC | 57,832 | 167 | 0.289% | 1,631 | 101 |
| Bell Atlantic | 58,437 | 114 | 0.195% | 2,637 | 69 |
| BellSouth | 24,104 | 41 | 0.170% | 950 | 32 |
| US West | 16,695 | 8 | 0.048% | 565 | 7 |
| Sprint | 7,545 | 30 | 0.398% | 363 | 19 |
| Total | 147,612 | 344 | 0.233% | 5,543 | 219 |

23 Statistics derived from Table 9.4, Trends in Telephone Service, Industry Analysis Division, Federal Communications Commission, April 10, 2000.

24 Holding company statistics aggregated to reflect SBC/Ameritech and Bell Atlantic/GTE mergers.

## CONCLUSION

The competitive promise of the Telecommunications Act of 1996 was not intended to be limited to the digital customer. As the PACE Coalition has explained – and evidence from New York and Texas confirms – competition is possible for the smaller analog customer, but only with access to unbundled local switching. The economic crossover to high-speed digital services – arrangements that justify the complexity and cost of manual provisioning – has been shown to be 20 lines. Accordingly, the Commission should increase the restriction on unbundled local switching to match the point at which impairment diminishes – i.e., for customers with more than 20 lines in the top 50 MSAs.

Sincerely,

Genevieve Morelli

Attachments
cc: Larry Strickling
Dorothy Attwood
Jake Jennings
Jonathan Reel
Christopher Libertelli

**The PACE Coalition**
**CC Docket No. 96-98**
**August 24, 2000**

# The Commission Should Reject ILEC Efforts to Expand the Local Switching Restriction Beyond the Top 50 MSAs

## I. The ILECs' central claim equates the distribution of NXX codes to the deployment of local switches.

A. NXX codes are used to define local calling areas and the traffic subject to reciprocal compensation.

B. NXX code distribution does not correlate with switch placement, nor does it imply anything about the types of services that competitors have made available.[1]

1. NXXs are requested to provide broad local coverage for ISPs.
2. NXXs are requested in advance of market entry.
3. NXXs are used by some entrants exclusively to serve customers on-net.

## II. Local switch deployment does not demonstrate that carriers would not be impaired without access to unbundled local switching.

A. Many switches are used to serve innovative market niches. Market data confirms that the switches that have been installed are heavily focused on supporting ISP competition, not providing conventional telecommunications services.[2]

B. Qwest's claim that NXX assignment is sufficient to prove lack of impairment should be totally disregarded because Qwest's claim that it does not measure traffic to CLEC switches is patently false.

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1 *See* Letter from Chuck Goldfarb to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 96-98, filed July 20, 2000 [mislabeled as filed April 20, 2000].

2 *See* Summary of Traffic Flow Statistics between ILEC and CLEC switches (Attachment 1).

## III. Impairment cannot be corrected by installing a switch in a single market. Being able to serve multi-location customers requires the ability to establish a national or regional footprint. Consequently, impairment is a function of the *number* of MSAs needed to enter, as much as by the *size* of any individual MSA.

A. Multi-location customers dominate the complex business services (i.e., over DS-1) market.

B. A carrier's ability to serve multi-location customers is dependent upon a national or regional footprint. SBC has concluded that a carrier must be able to serve 70-75% of the locations of the Fortune 500 companies to compete effectively.[3]

C. ILECs readily admit that carriers are constrained by how many markets they can reasonably enter.

1. Bell Atlantic concluded that it needed to merge with GTE in order to be able to enter 21 new markets.[4]

2. SBC determined that it must compete in the top 50 MSAs to serve large national accounts, and that only by merging with Ameritech could it reduce its entry requirements to a manageable 20 new markets.[5] According to SBC, relying on de novo entry to evolve into a national local company " ... would be a death march."[6]

D. All non-ILEC entrants approach every market de novo. The 50-MSA restriction *already* imposes on new entrants a market barrier that is more than twice the barrier that the largest incumbent local exchange carrier found to be preclusive.

## IV. The Commission should reject efforts to expand the limitation on the availability of unbundled local switching beyond the top 50 MSAs.

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3 Testimony of James Kahn, SBC Senior Vice President, before the Ohio Public Utilities Commission, Case No. 98-1082-TP-AMT, Tr. 64, January 7, 1999.

4 *See* Declaration of David J. Teece on behalf of GTE Corporation and Bell Atlantic Corporation, Federal Communications Commission, CC Docket No. 98-184, paras. 41-43, filed December 18, 1998.

5 Testimony of James Kahn, SBC Senior Vice President, before the Ohio Public Utilities Commission, Case No. 98-1082-TP-AMT, Tr. 64, January 7, 1999.

6 Id. at Tr. 176-177.